

REMARKS

Claims 1-20 are all the claims pending in the application. Claims 1 and 11 have been clarified to more particularly identify and distinctly claim Applicants' invention. Support for the changes to claims 1 and 11 may be found in the specification as originally filed, for example, at page 16, lines 8-10.

I. The Rejection Under 35 U.S.C. §103

Claims 1-20 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Raychaudhuri et al (EP 0747895 A2) in view of Hurditch et al (U.S. 5,952,073).

Applicants respectfully submit that the present invention is not obvious over the disclosures of Raychaudhuri et al in view of Hurditch et al and request that the Examiner reconsider and withdraw this rejection in view of the following remarks.

Applicants' invention relates to an improvement in DVD-R (recordable digital video disc) for which a laser beam having a wavelength of 600 to 700 nm may be employed for recording and reproducing the information and to a method for recording comprising irradiating the DVD-R with a laser beam having a wavelength of 600 to 700 nm. Applicants' invention is characterized by a recording dye layer that has a thickness in the range of 40% to 90% of a thickness corresponding to an optical path which gives the first minimum reflectance. Thus, the thickness of

Applicants' claimed recording dye layer is relatively small and is determined in consideration of the optical path giving the first minimum reflectance.

In contrast to Applicants' claimed invention, the disclosures of Raychaudhuri et al relate to a CD-R. See Raychaudhuri et al, the description of FIELD OF THE INVENTION and claim 1, in which a laser wavelength of about 780 nm is disclosed. The CD-R of Raychaudhuri et al are characterized as having a thickness of the optical recording layer and the reflecting layer selected such that the R_{\min} reflectivity of the element is about or greater than 70% for laser wavelength of about 780 nm. The optical recording layer disclosed in Raychaudhuri et al is typically a recording metal alloy layer.

First of all, unlike the definitions of Applicants' invention, the thickness discussed in Raychaudhuri et al is not for the recording layer, but rather is for the combination of the recording layer and the reflecting layer. This feature is clearly different from the corresponding feature of Applicants' invention.

Second, the thickness of the combination of recording layer and reflecting layer of Raychaudhuri et al is selected to give a reflectivity curve in which R_{\min} is about 70% and R_{\max} is greater than 80%. See the reflectivity curve of Raychaudhuri et al, Figure 3. Raychaudhuri et al chooses such features so as to differentiate their corresponding optical characteristics from that a prior art CD-R disc in which R_{\min} is about 50% and R_{\max} is about 70%. See the reflectivity curve of Raychaudhuri et

not true
al, Figure 1. It is noted that Applicants' invention is different from the teachings of Raychaudhuri et al and from that of the prior art cited in Raychaudhuri et al, for example, as illustrated in Applicants' Figure, R_{\min} is about 50% and R_{\max} is about 60%. Further, in Applicants' invention, there is no concern about the value of R_{\min} , per se.

Thus, teachings of Raychaudhuri et al are not concerned with the thickness of the CD-R at which the first R_{\min} is observed. Further, the disclosures of Raychaudhuri et al do not relate to how to determine the thickness of the recording layer alone.

In summary, there are clear differences between Applicants' invention and teachings of Raychaudhuri et al. Notably, the thickness of the recording dye layer of Applicants' DVD-R is determined with consideration of an optical path which gives the first minimum reflectance, while the teachings of Raychaudhuri et al relate to the thickness of the combination of recording layer and reflecting layer, which are determined to give a high R_{\min} and a high R_{\max} .

The secondary reference, Hurditch et al describes the general constitution of a DVD-R but does not teach or disclose Applicants' claimed invention or features as discussed above.

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Accordingly, even if the cited references are combined, it is respectfully submitted that it would not have been obvious to one of ordinary skill in the art to select the inventive DVD-R and a recording dye layer that has a thickness in the range of 40% to 90% of a thickness corresponding to an optical path which gives the first minimum reflectance.

For the above reasons, it is respectfully submitted that the subject matter of claims 1-20 is neither taught by nor made obvious from the disclosures of Raychaudhuri et al in view of Hurditch et al and it is requested that the rejection under 35 U.S.C. §103(a) be reconsidered and withdrawn.

II. Conclusion

In view of the above, Applicants respectfully submit that their claimed invention is allowable and ask that the rejection under 35 U.S.C. §103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

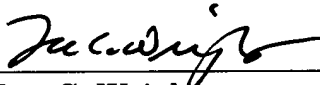
If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

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Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1 (Amended). A recordable digital video disc comprising a transparent disc substrate provided with a spiral pregroove, a recording dye layer placed in the pregroove on which information is recorded by irradiation with a laser beam, and a light-reflecting layer, arranged in order, wherein the recording dye layer has a thickness in the range of 40% to 90% of a thickness corresponding to an optical path which gives the first minimum reflectance, the optical path giving the first minimum reflectance being determined from a reflectance curve which is prepared using a laser beam having a wavelength of 600 to 700 nm and recordable digital video discs composed of the same disc substrate, the same recording dye layer having varying thickness, and the same light-reflecting layer.

11 (Amended). A recordable digital video disc comprising a transparent disc substrate provided with a spiral pregroove, a recording dye layer placed in the pregroove on which information is recorded by irradiation with a laser beam, a light-reflecting layer, and a disc substrate, arranged in order, or comprising a pair of a transparent disc [substrate] substrates provided with a spiral pregroove, a recording dye layer placed in the pregroove on which information is recorded by irradiation with a laser beam, a light-reflecting layer, arranged in order, said

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recording dye layers being placed between the transparent disc substrates, wherein each of the recording dye layers has a thickness in the range of 40% to 90% of a thickness corresponding to an optical path which gives the first minimum reflectance, the optical path giving the first minimum reflectance being determined from a reflectance curve which is prepared using a laser beam having a wavelength of 600 to 700 nm and recordable digital video discs composed of the same disc substrate, the same recording dye layer having varying thickness, and the same light-reflecting layer.